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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,812	07/14/2003	Yoji Mizutani	KKH-0028	4175

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EXAMINER
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MOORE, KARLA A

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 07/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

8

<b>Office Action Summary</b>	<b>Application No.</b> 10/617,812	<b>Applicant(s)</b> MIZUTANI ET AL.	
	<b>Examiner</b> Karla Moore	<b>Art Unit</b> 1763	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 March 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.  
     4a) Of the above claim(s) 1-18 and 30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0703,0106</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of claims 19-29 in the reply filed on 6 March 2006 is acknowledged. The traversal is on the ground(s) that "a thorough search of the subject matter of any one group of claims would necessarily encompass a search for the subject matter of the remaining claims". This is not found persuasive because it is untrue. The searches based on the claimed inventions would all be different. Although there may be some overlap, none of the searches would necessarily encompass any other and thus to search all three inventions would be a serious burden.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 1-14 and 30 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 19, 22-23, 26 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated U.S.

Patent Publication No. 2004/0020601 to Zhao et al.

5. Zhao et al. disclose a substrate processing apparatus in Figure 3A, comprising: a first processing section (to the left of, above and below 108) having a coating unit (114) capable of coating a being used for coating a substrate with a coating solution which becomes an insulating film; a second processing section (to the right of 108) having a curing processing unit (116) capable of curing the insulating film on

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the substrate individually; and a carrier mechanism (2) for carrying the substrate between the first processing section and the second processing section.

6. With respect to claim 22, the curing processing unit is structured so that the pressure in said curing processing unit is allowed to be reduced (paragraph 105).

7. With respect to claim 23, said first processing section includes a heating/annealing processing unit (paragraph 76).

8. With respect to claims 26, the pressure in said second processing section is allowed to be reduced (paragraph 105).

9. With respect to claim 28, a thermal processing unit (any of 130) for subjecting the substrate to thermal processing is provided in said second processing unit.

***Claim Rejections - 35 USC § 103***

36. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

37. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

38. Claims 19-20, 22-23 and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,470,798 to Ouellet in view of U.S. Patent No. 6,132,814 to Livesay et al.

10. Ouellet discloses the invention substantially as claimed and comprising: a first processing section (left part of apparatus) having a coating unit (Figure 1; 5) capable of coating a being used for

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coating a substrate with a coating solution which becomes an insulating film; a second processing section (right side of apparatus) having a curing processing unit (one of right-most units labeled 6; it appears the left most "6", should have been labeled "8"; column 7, row 27) capable of curing the insulating film on the substrate by individually irradiating the substrate with electron beams; and a carrier mechanism (2) for carrying the substrate between the first processing section and the second processing section.

11. However, while Ouellet teaches that different types of curing units can be used (column 8, rows 6-9), an electron beam curing apparatus is not specifically taught.

12. Livesay et al. teach using an electron beam curing apparatus for curing a spin on glass film for the purpose of forming a dense, etch-resistant film (column 4, row 45 through column 5, row 17).

13. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided an electron beam curing apparatus in Ouellet in order to form a dense, etch resistant film as taught by Livesay et al.

14. With respect to claim 20, the electron beam curing apparatus of Livesay et al. further includes a grid electrode (Figure 1, 26) between a mounting table on which the substrate is mounted and a device for irradiating with the electron beams.

15. With respect to claim 22, the curing processing unit is structured so that the pressure in said curing processing unit is allowed to be reduced (column 7, rows 38-44 and column 8, rows 13-15).

16. With respect to claim 23, the first processing section includes a heating processing unit (left-most heating unit) for subjecting the substrate coated with the coating solution to heating processing.

17. With respect to claim 25, Ouellet further comprises a carrier chamber (12) housing said carrier mechanism and being hermetically closable; and a pressure reducing mechanism for reducing the pressure in said carrier chamber to a predetermined pressure (column 7, rows 38-44 and column 8, rows 13-15).

18. With respect to claim 26, in Ouellet, the pressure in said second processing section is allowed to be reduced (column 7, rows 38-44 and column 8, rows 13-15).

19. With respect to claim 27, Ouellet further discloses a reduced pressure chamber housing said carrier mechanism and said second processing section and being hermetically closable; and a pressure

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reducing mechanism for reducing the pressure in said pressure chamber to a predetermined pressure (column 7, rows 38-44 and column 8, rows 13-15).

20. With respect to claim 28, a thermal processing unit (other of right most units labeled 6) for subjecting the substrate to thermal processing is provided in said second processing unit.

21. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ouellet and Livesay et al. as applied to claims 19-20, 22-23 and 25-28 above, and further in view of U.S. Patent No. 5,489,339 to Hattori et al.

22. Ouellet and Livesay et al. disclose the invention substantially as claimed and as described above.

23. However, Ouellet and Livesay et al. fail to disclose the substrate mounting mechanism capable of receiving a reverse bias voltage.

24. Hattori et al. teach the use of a processing apparatus comprising a substrate mounting mechanism capable of receiving a reverse bias voltage for the purpose of controlling processing (column 5, rows 6-12).

25. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a substrate mounting mechanism capable of receiving a reverse bias voltage in Ouellet and Livesay et al. in order to control processing as taught by Hattori et al.

26. Claim 24 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouellet and Livesay et al. as applied to claims 19-20, 22-23 and 25-28 above, and further in view of U.S. Patent Publication No. 2003/0154001 A1 to Oh.

27. Ouellet and Livesay et al. disclose the invention substantially as claimed and as described above.

28. However, Ouellet and Livesay et al. fail to disclose the first processing section further including a resist coating unit, a developing unit and an exposure processing unit. Nor do Ouellet and Livesay et al. disclose an etching unit.

29. Oh teach incorporating processing units such as resist coating units, developing units and etching units into a cluster tool for the purpose of realizing certain organizational and wafer handling benefits and efficiencies (paragraphs 13, 16 and 38-39).

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30. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a resist coating unit, a developing unit and an exposure processing unit in Ouellet and Livesay et al. in order to realize certain organizational and wafer handling benefits and efficiencies as taught by Oh.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 571.272.1440. The examiner can normally be reached on Monday-Friday, 9:00 am-6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571.272.1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-

1000.



Karla Moore  
Primary Examiner  
Art Unit 1763  
11 June 2006